

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2005/009813

A. CLASSIFICATION OF SUBJECT MATTER  
B01D46/52 B01D46/24

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
B01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 795 361 A (LANIER, JR. ET AL) 18 August 1998 (1998-08-18) column 1, line 64 - column 2, line 13 column 3, line 51 - column 4, line 3 figures -----	1-20
X	EP 0 726 389 A (FILTERWERK MANN & HUMMEL GMBH) 14 August 1996 (1996-08-14) column 3, line 28 - line 54 figure 2 -----	1-20
A	WO 03/084641 A (DONALDSON COMPANY, INC) 16 October 2003 (2003-10-16) cited in the application the whole document -----	1-18

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

10 August 2005

Date of mailing of the international search report

30. 11. 2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
Fax: (+31-70) 340-3016

Authorized officer

Hilt, D

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2005/009813

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-20

### Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-20

An air filter comprising:

- a z-filter media pack comprising fluted media secured to facing media;
- a preform having a portion circumscribing the media pack; the preform including a housing seal support portion;
- a housing seal arrangement.

---

2. claim: 21

A method of making an air filter cartridge; the method including steps of:

- coiling a media arrangement comprising a fluted sheet secured to a facing sheet to form a media pack having the facing sheet directed to an outside; and,
- inserting the media pack into a preform having a core including a blade positioned to become inserted into the media pack during the step of inserting.

---

# INTERNATIONAL SEARCH REPORT

## Information on patent family members

International Application No  
PCT/US2005/009813

Patent document cited in search report	Publication date			Patent family member(s)	Publication date
US 5795361	A	18-08-1998	CA	2199590 A1	12-09-1997
EP 0726389	A	14-08-1996	BR	9600553 A	30-12-1997
			DE	19539463 A1	22-08-1996
			ES	2118649 T3	16-09-1998
WO 03084641	A	16-10-2003	AU	2003226234 A1	20-10-2003
			CA	2480740 A1	16-10-2003
			CN	1652859 A	10-08-2005
			EP	1494785 A2	12-01-2005
			JP	2005521554 T	21-07-2005
			US	2003217534 A1	27-11-2003
			US	2005022484 A1	03-02-2005